PATENT

Attorney Docket No.: SHIM1130

Applicant: Serial No.:

Toshio Miyata 10/089,789

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Page 2

## **AMENDMENTS**

## **Amendments to the Claims**

Please cancel claims 1-6, 8, 10-11, and 13-14 without prejudice.

Please amend claims 7, 9, 12 and 15 as follows:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Upon entry of the present amendment, the claims will stand as follows:

Claims 1-6 (Cancelled)

7. (Currently amended) [[The]] A carrier of claim 3 on which one or more biguanide agents have been immobilized, wherein the shape of the carrier is selected from the group consisting of: membranous, fibrous, granular-shaped, hollow fiber-like, non-woven fabric-like, porous, and honeycomb-shaped carrier.

Claim 8. (Cancelled)

9. (Currently amended) [[The]] A carrier of claim 3 comprising one or more biguanide agent immobilized thereon, wherein the carrier is a hemodialysis membrane.

Claims 10-11. (Cancelled)

12. (Currently amended) A peritoneal dialysate solution comprising the carbonyl stress-decreasing agent biguanide agent of claim 1 one or more biguanide agent or pharmacologically acceptable salt thereof.

**PATENT** 

Attorney Docket No.: SHIM1130

Applicant: Serial No.: Toshio Miyata 10/089,789

Filed:

August 19, 2002

Page 3

Claims 13-14 (Cancelled)

15. (Currently Amended) [[The]] A method of claim 14, for removing carbonyl compounds comprising contacting a carrier on which a biguanide agent has been immobilized, with one or more body fluid selected from one or more of blood, blood plasma and peritoneal dialysate, wherein the blood purification [[step]] comprises one or more steps selected from the group consisting of: blood filtration, blood filtration dialysis, blood adsorption, and blood plasma separation.

Please add the following new claims 16-38:

- 16. (New) The carrier of claim 7, wherein the biguanide agent is a compound selected from phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 17. (New) The carrier of claim 7, wherein the carrier has a body fluid contact area that can be controlled by altering one or more parameter selected from thickness, surface area, diameter, length, shape, and size of the carrier.
- 18. (New) The carrier of claim 7, wherein the biguanide agent is immobilized on the carrier by a reaction selected from physical adsorption, a specific biochemical binding reaction, ion binding, covalent bonding, or grafting.
  - 19. (New) A peritoneal dialysate solution comprising the carrier of claim 7.
- 20. (New) The carrier of claim 9, wherein the biguanide agent is a compound selected from one or more of phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.

Attorney Docket No.: SHIM1130

Applicant: Serial No.: Toshio Miyata 10/089,789

Filed:

August 19, 2002

Page 4

- 21. (New) The peritoneal dialysate solution of claim 12, wherein the biguanide agent is one or more compound selected from phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 22. (New) The method of claim 15, wherein the biguanide agent is one or more compound selected from phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 23. (New) A carrier on which a biguanide agent has been immobilized, wherein the biguanide agent remains immobilized when contacted with blood, blood plasma or peritoneal dialysate.
- 24. (New) The carrier of claim 23, wherein the biguanide agent is selected from one or more of phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 25. (New) The carrier of claim 23, wherein the carrier is selected from one or more of synthetic or naturally-occurring organic macro-molecular compounds, inorganic material and materials coated with polysaccharide(s) and synthetic polymer(s) thereof.
- 26. (New) The carrier of claim 25, wherein the inorganic compounds are selected from one or more of glass beads, silica gel, alumina and activated charcoal.
  - 27. (New) The carrier of claim 25, wherein the carrier is an inorganic material.
- 28. (New) The carrier of claim 25, wherein the carrier is a synthetic organic macro-molecular compound.
- 29. (New) The carrier of claim 25, wherein the carrier has a body fluid contact area that can be controlled by changing one or more parameters selected from thickness, surface area, diameter, length, shape, and size of the carrier.

PATENT

Attorney Docket No.: SHIM1130

Applicant: Serial No.:

Toshio Miyata 10/089,789

Filed:

August 19, 2002

Page 5

- 30. (New) The carrier of claim 23, wherein the biguanide agent is immobilized on the carrier by a reaction selected from one or more of physical adsorption, a specific biochemical binding reaction, ion binding, covalent bonding, or grafting.
  - 31. (New) A peritoneal dialysate solution comprising the carrier of claim 23.
- 32. (New) A method for removing carbonyl compounds comprising contacting the carrier of claim 23 with one or more body fluids selected from blood, blood plasma and peritoneal dialysate.
- 33. (New) The method of claim 32, wherein the removal of the carbonyl compounds is carried out during *in vivo* or *ex vivo* blood purification.
- 34. (New) A method for removing carbonyl compounds comprising contacting one or more biguanide agent with one or more body fluid selected from blood, blood plasma and peritoneal dialysate.
- 35. (New) The method of claim 34, wherein the biguanide agent is selected from one or more of phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 36. (New) The method of claim 34, wherein the removal of the carbonyl compounds is carried out during *in vivo* or *ex vivo* blood purification.
  - 37. (New) The method of claim 34, wherein the biguanide agent is orally administered.
- 38. (New) The method of claim 34, wherein the biguanide agent is administered by injection.